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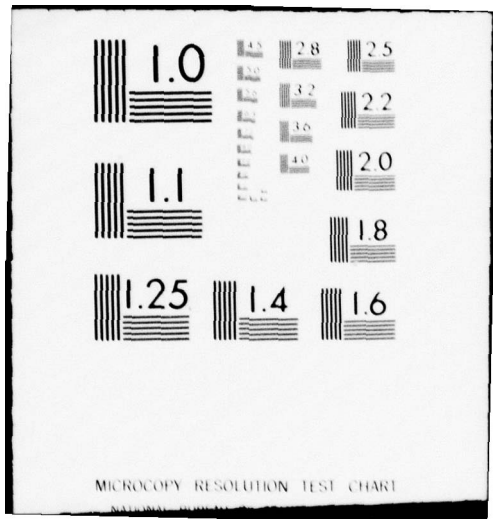
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ECONOMIC PRICE ADJUSTMENT (EPA) PROVISIONS

DECEMBER 1977

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by

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EXECUTIVE SUMMARY

A. PROJECT BACKGROUND. One of the reasons for reviewing the US Army Materiel Development and Readiness Command's (DARCOM) Economic Price Adjustment (EPA) experience is that history often repeats itself. In the fall of 1973 few DARCOM contracts contained EPA provisions and the resulting inflation caused many DARCOM contractors to absorb large cost increases on their firm-fixed-price contracts. Although many contractors requested relief as a result of inflation, there was no legal method to grant relief since they did not contain EPA provision. Since the current economic trend foresees continued inflation, there exists a need to study recent DARCOM EPA experience to preclude a repeat of the past.

B. OBJECTIVES. The objectives of the study are to evaluate the effectiveness of the current policy, criteria, and usage of EPA provisions within DARCOM and to identify the need for revised criteria in determining the necessity for EPA in future contracts.

C. STUDY APPROACH AND RESEARCH METHODS EMPLOYED. The study and research methods employed consisted of reviewing publications and on-going research in the area, evaluating current EPA policies, evaluating statistical data on EPA and interviewing personnel at HQ DARCOM and its major subordinate commands. Data was limited to contracts with EPA provisions awarded through 30 September 1976. The report does not reflect DARCOM experience since 30 September 1976 including recent policy statements on de-escalation.

D. FINDINGS AND RECOMMENDATIONS. Economic Price Adjustment provisions are necessary contractual options available to the Contracting Officer in the selection of contract type. The contract type should be a fair, reasonable, and equitable risk allocation between the contract prices. The report summarizes that today's EPA policy promulgated since 1974 dictates current usage. The findings and their supporting narrative show that current usage fails to take into account DOD policy on risk, profit, contract type, and cost analysis. The recommendations include: revision to DOD policy on EPA, risk, profit, contract type, and cost analysis; areas of emphasis on the use of EPA; and potential areas for future studies.

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CHAPTER I

INTRODUCTION

A. FOREWORD. One of the reasons for a review of the US Army Materiel Development and Readiness Command's (DARCOM) Economic Price Adjustment (EPA) experiences is that history repeats itself. When the Arab oil embargo and materiel shortages occurred in the Fall of 1973 a limited number of contracts contained EPA provisions. The resulting spiraling inflation caused many DARCOM contractors to absorb large cost increases on firm-fixed-price contracts including some multi-year and many with options. Consequently a large number of contractors requested relief. Lacking an EPA provision in the affected contracts, a legal vehicle for granting relief was not available. Authorities foresee continued inflationary problems, especially in selected commodities. Therefore a need existed to study recent DARCOM experiences with EPA provisions to preclude a repetition of the past.

B. PROBLEM. Inflationary economic conditions during 1974 and 1975 necessitated the increased use of Economic Price Adjustment provisions. Within the Department of the Army (DA), EPA clauses were required for long-term and multi-year contracts, and contracts with fixed-price options. EPA policy has been extended to subcontracts. Current inflation rates, while still historically high, are much more stable and predictable than in the 1974 and 1975, excepting conditions such as another oil embargo. There needs to be a review of the effectiveness of past and current usage of EPA provisions to determine the proper role of EPA provisions in future Army contracts.

C. OBJECTIVES. The objectives of the study are to evaluate the effectiveness of the current policy, criteria, and usage of EPA provisions within DARCOM and to identify the need for revised criteria in determining the necessity for EPA in future DARCOM contracts.

D. STUDY APPROACH AND RESEARCH METHODS EMPLOYED.

1. Review recent publications and on-going research in the area of EPA provisions.

2. Evaluate current Department of Defense (DOD), DA, DARCOM, and major subordinate commands (MSC's) policies on the use of EPA provisions.

3. Obtain and analyze Individual Procurement Action Reports (DD Form 350) data to determine the current status and trends in the use of EPA provisions within DARCOM.

4. Select and analyze a sample of fixed-price contract files with EPA provisions at selected DARCOM MSC's and in conjunction therewith interview appropriate personnel to assess opinions and attitudes on the use of EPA provisions.

5. Conduct interviews with the Defense Contract Audit Agency (DCAA), Defense Contract Administration Services (DCAS), and other governmental and non-governmental personnel.

6. Analyze all data gathered and synthesize findings in the form of a written report.

7. The study and research did not address contracts that were subject to ASPR 3-404.3(c)(3)C.13. The citation states in part, "When the contract contains cost incentives, any sums paid to the contractor on account of economic price adjustment provisions shall be subtracted from the total

of the contractor's allowable cost for the purpose of establishing the total costs to which the cost incentive provisions apply."

8. Data was limited to contracts with EPA provisions awarded through 30 September 1976. The report does not reflect DARCOM experience since 30 September 1976 including recent policy statements on de-escalation.

E. ORGANIZATION OF REPORT. The review of current literature and policy guidance on EPA usage is contained in Chapter II. Chapter III covers the analysis of data and findings on EPA based on field trips and interviews. Chapter IV provides guidelines for better application of EPA in future procurements. Findings and recommendations are provided in Chapter V.

CHAPTER II

THEORY AND POLICY ON EPA USAGE

A. INFLATION MEASURES AND EPA USAGE. The purpose of this section of the report is to review briefly: inflation, the major cause of the need for EPA provisions; index numbers which are utilized to determine or project inflation; contingency pricing which is a substitute for EPA provisions; and Government and industry treatment of inflation.

1. Inflation. Paul A. Samuelson defines inflation as "...a time of generally rising prices for goods and factors of production - rising prices for bread, cars, haircuts, rising wages, rents, etc. Deflation means a time when most prices and costs are falling."[1] Inflation is a product of many causes such as material shortages, too much spending and attempts to control prices, to name a few. While an incomplete explanation, inflation is widely regarded as being caused by too many dollars chasing too few goods, a phenomenon known as "demand-pull" inflation.

2. Index Numbers. An index number is used to measure the change in magnitude such as price of an item compared to its price in some basic period. Index numbers are usually classified into three basic categories: price, quantity and value. This study is concerned only with price. There are three basic price indices with which most people are familiar; they are the Consumer Price Index (CPI), Wholesale Price Index (WPI), and Gross National Product (GNP) Deflator.

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[1]Paul A. Samuelson, Economics, Ninth Edition. (New York, N.Y., McGraw-Hill Book Co., 1973), p. 270.

The Consumer Price Index is a monthly index made up of the prices of 400 selected items (goods and services) bought by families throughout the US every month. This data is collected by the US Department of Labor, Bureau of Labor Statistics. Table 1 is an example of the Consumer Price Index in terms of the effects of inflation rates from one year to the next. In simple terms, the CPI means the cost of groceries in 1975 was 11.9% higher than in 1974.

The Wholesale Price Index is an index which covers the wholesale prices of approximately 2300 items. Table 1 also shows the WPI composite in terms of annual inflation rates compared to the CPI.

The Gross National Product Deflator is an index of the Gross National Product. The Gross National Product is the value of end goods and services produced by the US during a year. The GNP is now over a trillion dollars. The GNP Deflator is a gross indicator of price changes in the US economy as a whole.

There are four primary sources of index data:

(1) US Department of Labor, Bureau of Labor Statistics,

(2) US Department of Commerce, National Bureau of Standards and Bureau of Economic Analysis,

(3) Federal Reserve System, and

(4) Trade Association Publications.

In Defense contract pricing, the general purpose of index number is to aid the price analyst to either inflate or deflate prices paid for items in previous years to some base year's constant dollars by removing inflation so

TABLE 1. ANNUAL INFLATION RATES

FISCAL YEAR FROM	TO	CONSUMER PRICE INDEX	WHOLESALE PRICE INDEX *	GNP DEFLATOR	INFLATION ON DEFENSE BUDGET OUTLAYS	TOA
73	74	9.0%	16.1%	8.1%	0.4%	11.0%
74	75	11.9%	18.3%	11.3%	14.4%	13.3%
75	76	9.5%	4.7%	9.0%	9.9%	8.4%

*Based on unofficial forecast after January 1975.

SOURCE: Copyright 1975 by the Bureau of National Affairs, Inc., Washington, D. C. 20037.
A-10 (No. 566) (FCR) 2-3-75.

that prices for each year can be directly compared. Thus index numbers can aid the price analyst: to inflate or deflate prices for direct comparison; to project costs related to EPA agreements in contracts for budget purposes; and to facilitate trend analysis in the selection of an index to use in an EPA contract.

The basic method to be used by a Contracting Officer to select an index is to consult with a price analyst or an economic analyst. Theodore W. Liss, in a presentation at the Northeast NCMA Regional Symposium, explains:

> the effort involved and the problems encountered, in constructing specific indices tailored to particular procurement is one of the significant reasons why economic price adjustment provisions are rarely used in Defense Contracts. Few negotiators and price analysts are familiar with the sources of index data or the application of those data. The many possible labor and material indices -- numbering more than a thousand at the most detailed level - magnify the problem of selecting an appropriate set of indices for a particular procurement. The result, it has seemed, has been to avoid the issue entirely and to provide little or no protection against the consequences of future price level changes.[2]

A paper by Bass and Welch states that the use of indices have four basic advantages:

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[2] Theodore V. Liss, A General Index for Economic Price Adjustment of Defense Contracts, (Presentation at the NCMA Northeast Regional Symposium, May 8-9, 1975), p. 28.

(1) A simple method is provided for measuring changes over time and also change between different locations,

(2) When data is stated in a variety of units such as dollars, tons or gallons, the measurement of change is simplified through index numbers.

(3) A general measurement or segment of business can be expressed in a single figure through the construction of a composite index, and

(4) Cyclical patterns of business are readily described.[3]

This portion of the report is not intended to teach the reader how to use index numbers in defense contract pricing but to give a brief overview of index numbers. For the reader who is interested in learning more about index numbers, their construction and use, one is referred to "Price Index Numbers in Defense Contract Pricing" published by Procurement Associates.

3. Contingency Pricing As A Substitute For EPA Provisions. The primary reason for using contingency pricing is to achieve competition and obtain the lowest price. Increased use has been the experience in recent years due to the increased emphasis on firm-fixed price (FFP) contracts containing long contractual periods. The extended contract periods are caused by the exercise of options and the use of multi-year provisions. But what would happen to the contractor on these contracts if the US had a sudden upward trend in inflation as occurred in the fall of 1973 as a result of the Arab oil embargo and material shortages? An FFP contract places total risk on the contractor for price, performance and time. What occurred in the fall of 1973 left the

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[3]Melvin T. Bass, Major, USAF, and Bobby O. Welch, Major, USAF, An Evaluation of Indexation of Material Costs as a Basis for Economic Price Adjustment of Fixed-Price Contracts, LD 33, 683A, Research Study. (Maxwell Air Force Base, Alabama: Air University, May 1975), pp. 19 & 20.

Contracting Officers no choice but to enforce the terms of the contract because of the absence of a legal basis to provide contractual relief.

In a dynamic economy like the United States where certain items can fluctuate widely in price, it is apparent that EPA should be used to protect both the contractor and the Government. Otherwise, the contractor could ask for an inordinately large contingency price and under these conditions the Government would be better off to use a type of contract provision which would reduce the contractor's risk due to inflation. One alternative is an EPA provision. Ultimately the Government might receive a lower price in this contractual environment by the use of an EPA provision rather than the use of an FFP contract which contains contingency pricing.

4. EPA As An Alternative to FFP Contracts With Contingency Pricing.

a. Government Treatment of Inflation. The previous section discussed why FFP contracts with contingency pricing were not always the answer to sporadic inflation. The concept of escalation clauses is not new. Wage escalation clauses, more commonly known as cost-of-living adjustments (COLA's) tied to the CPI, have been used for years in labor contracts and retirement programs. In fact, all federal employees look for a Comparability Pay Adjustment each October 1 to maintain their purchasing power lost to inflation.[4]

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[4] H.C. Stiger and R.W. Stiger, Inflation Management. (New York: John Wiley & Sons, 1976), p. 410.

ASPR 3-404.3 states that "the fixed-price contracts with economic price adjustment may be used... to protect the contractor and the Government against significant economic fluctuations in labor or material costs or to provide for contract price adjustments in the event of changes in the contractor's established prices. The economic price adjustment provisions are designed to provide for the upward and downward revision of the stated contract price upon the occurrence of certain contingencies which are specifically defined in the contract."[5]

ASPR recognizes three broad types of EPA provisions: (1) adjustment based on established prices, (a) price adjustment for basic steel, aluminum, brass, bronze or copper mill products, (b) price adjustment for nonstandard steel items, (c) price adjustments for standard supplies, and (d) price adjustment for semistandard supplies; (2) adjustment based on labor or material costs (actual costs method); and (3) adjustment based on labor or material costs (cost index method).

b. Treatment of Inflation in Private Sector Contracts. Many firms in the private sector view escalation clauses as a "way of life." Stiger in his textbook on Inflation Management states, "The price escalation clause, if designed right, gives us a degree of reasonable protection. Generally, both sellers and buyers view escalation clauses as necessary evils during periods of inflation; both would rather work with fixed-price contracts but

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[5] Department of Defense, Armed Services Procurement Regulation. (1976 Edition.)

are willing to adopt the clauses necessary."[6] Table 2 describes eight reasons for the private sector to limit price escalation; provides sample commercial contract provisions to limit price increases; and provides a comparison to ASPR EPA clauses to cover the same situation.

B. REVIEW OF CURRENT POLICY GUIDANCE ON THE USE OF ECONOMIC PRICE ADJUSTMENT (EPA) PROVISIONS.

1. ASPR Policy On The Use of EPA. Basically ASPR 3-404.3 states, "Use of this type of contract is appropriate when serious doubt exists as to the stability of market or labor conditions which will exist during an extended period of contract performance and when contingencies which would otherwise be included in the contract price can be identified and covered separately by a price adjustment clause."[7] Although the ASPR elaborates on this guidance, it still leaves to the discretion of the Contracting Officer when to use EPA in specific contractual situations. The current Department of Defense (DOD) policy on EPA provisions was first promulgated by Defense Procurement Circular 120 to the Armed Services Procurement Regulation (ASPR) published 11 March 1974. The previous ASPR guidance referred to fixed-price contracts with escalation and provided clauses dated September 1968.

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[6] H.C. Stiger and R.W. Stiger, Inflation Management. (New York: John Wiley & Sons, 1976), p. 136.

[7] Department of Defense, Armed Services Procurement Regulation. (1976 Edition).

TABLE 2. EIGHT BASIC SITUATIONS IN THE PRIVATE SECTOR USED TO LIMIT PRICE ESCALATION

PURPOSE OF CLAUSE	SAMPLE	GOV	EPA
To limit price escalation to material costs.	Seller may not increase the price except to the extent of material cost increases after date of order.	No	
	Documentation of such increases must be provided.		Yes
To secure price increase approval.	Seller may not increase the price without buyer's approval prior to shipment. If new price is not approved, buyer may terminate the order.	No	
To limit price escalation to orders shipped after a certain date.	Seller may not increase the price of goods prior to _____ months from date of order.	No	
To hold cost increases to a maximum percentage [of original price].	Seller may not increase the price in excess of _____% of the original quoted price.		Yes
To ensure that price increases are justified.	Purchaser will be allowed to examine supplier's records and other pertinent data concerning cost of materials and labor to verify cost increases.		Yes
To limit price increases to government index increases.	Increase or decrease in the contract price shall be limited to the increase or decrease in the _____ Index, as published by the US Department of Commerce. Supplier must notify the buyer within _____ days of such increase or decrease, and proposals for contract price adjustments must include supporting documentation.		Yes
To limit increases to market prices published by the supplier.	Seller guarantees that order prices are not higher than supplier's published prices at date of contract and/or delivery.		Yes
To set a [yearly] price escalation limit.	Supplier's price may be adjusted upward for inflation only to _____% per year.		Yes

SOURCE: H. C. Stiger and R. W. Stiger, Inflation Management. (New York: John Wiley & Sons, 1976), pp 103-104.

The period between September 1968 and March 1974 was characterized by an increasing concern with the effects of inflation on firm-fixed-price (FFP) contracts. ASPR Committee Case 70-19, Wage and Material Price Escalation, was established to study the need for revised ASPR coverage. The case resulted in many diverse opinions within both industry and Government. The economic burden placed on Government contractors dictated an urgent need for revised guidance in spite of the wide range of opinions. The results were the March 1974 EPA clauses which are in use today.

The 1974 guidance recognizes that the word "escalation" is a misnomer because adjustments are both upward and downward from the base contract price. The 1974 guidance introduced a new clause which provides for price adjustments based on an increase or decrease from specified labor or material cost standards or indices made applicable to the contract. The new clause is referred to as the "Cost Index Method." The Cost Index Method of EPA is very popular with many Government and industry activities, especially those versions of the clause that do not require an expenditure profile as recommended for consideration in ASPR 3-404.3(c)(3)b10. Although the ASPR Committee does not have any plans for major revisions to current ASPR guidance on EPA, the Committee has clarified or is considering issues of EPA import in areas such as flowdown of EPA provisions to subcontracts and applying EPA to all program years of a multi-year contract. Essentially, the ASPR Committee is not aware of any problems encountered by field operational personnel that would require any major changes to current EPA guidance.

2. Military Department Policy Guidance. The guidance provided by the Army Procurement Procedure (APP), the Air Force ASPR Supplement (AF ASPR Sup) and the Navy Procurement Directives (NPD) are very limited in scope.

APP 2-104 provides for approval of economic price adjustment clauses, other than those cited in ASPR 7-106.1 and 7-106.2 for formal advertising, from either the Deputy for Materiel Acquisition, Office of the Assistant Secretary of the Army (Installations and Logistics) or as provided in the DARCOM Procurement Instruction. APP 3-404.3 provides similar guidance for all clauses under ASPR 7-106 for negotiated procurements. The APP requires the request for approval to explain the need for use of an EPA clause, state the intended contract environment and state the reasons why neither ASPR clause is appropriate.

AF ASPR Sup 3-404.3(b) requires that all Index Method EPA provisions and all variations from the standard clauses in ASPR 7-106 and 7-107 must be approved by the Head of the Procuring Activity or his designee. Delegation is limited to a level no lower than the Director of Procurement at an Air Force Logistics Command Air Logistics Center, and Air Force Systems Command Division or Center, or a major command headquarters. A copy of any such approved clause must be sent to Headquarters, US Air Force, Directorate of Procurement Policy for informational purposes.

The only policy on EPA provisions provided in the Navy Procurement Directives is in NPD 1-403.51(b)(2)b(iii). The NPD citation requires business clearance for formally advertised procurements, including two-step formal

advertising, from the Chief of Naval Material for any amendment of a contract after award inserting a clause providing for price redetermination, price escalation, or any other type of price revision; and any agreement or amendment effecting redetermination of the price of a contract pursuant to a redetermination clause contained therein if the contract previously obligated the Government to pay $1,000,000 or more and notwithstanding the fact that the redetermination is proposed at no change in existing contract price.

3. Defense Logistics Agency (DLA). The DLA has no implementing instructions in the Defense Supply Procurement Regulations.

4. Defense Contract Administration Services (DCAS). The Contract Administration Manual for Contract Administration Services (DSAM 8105.1) has provisions for "Contracts Providing for Price Revision" under paragraph S2-300.4c(1)(d) which states:

> Contracts containing clauses providing for price revision (price escalation and incentive price revision) require the establishment of internal controls adequate to identify those conditions necessitating administrative action. ACO's must be alert to market price fluctuations having an impact on their contracts. In all cases, prior to completing the Final Payment Notice NLA, the ACO will assure that all applicable clause requirements have been complied with and any necessary contract modifications have been processed.[8]

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[8] US Defense Supply Agency, Defense Supply Agency Manual 8105.1, Contract Administration Services, August 1973.

DCAS Headquarters has placed the responsibility for EPA adjustments on its field activities and their Administrative Contracting Officers.

5. Defense Contract Audit Agency (DCAA). The DCAA Contract Audit Manual (DCAAM 7640.1) does not specifically address EPA procurements or contracts, but paragraph 1-201 entitled "Establishment and Responsibilities" states:

> The Defense Contract Audit Agency was established by a directive of the Department of Defense for the purpose of performing all necessary contract auditing for the Department of Defense (DOD) and providing accounting and financial advisory services, in connection with the negotiation, administration and settlement of contracts and subcontracts, to all DOD procurement and contract administration activities. DCAA will also furnish contract audit services to other Government agencies where arrangements therefore are made.[9]

6. US Army Materiel Development and Readiness Command (DARCOM). The DARCOM Procurement Instruction (DARCOM PI) provides three EPA clauses as follows:

CITATION	TITLE
7-106.80	EPA Cost Index Method
7-106.81	EPA - Option Quantity
7-106.82	EPA - (Commodity Index-First Article Testing)

DARCOM PI 3-404.3 authorizes use of the above clauses for both formally advertised and negotiated procurement. Additionally, DARCOM Heads of Procuring Activities are given the authority to approve EPA clauses of the

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[9] *US Defense Contract Audit Agency, DCAA Contract Audit Manual, July 1965.*

type described in ASPR 3-404.3(c)(3), provided the clauses are substantially the same as those set forth in the above cited clauses. All other EPA clauses must be approved by the Directorate of Procurement and Production, DARCOM.

7. Selected DARCOM Major Subordinate Commands (MSC's). The MSC's visited by the research team had administrative guidance for their respective commands. Two particular points, not considered administrative, merit mention.

One MSC provides for the consideration of EPA provisions only in solicitations expected to result in contracts (including option provisions) that are $1,000,000 or more, plus a period of performance of two years or more. This criteria need not be applied to small business set-asides or unusually long delivery schedules in lesser dollar procurement, but these occurrences should be rare. Another MSC provides that an EPA clause for contract options may be waived provided the contract option price is a not-to-exceed (NTE) ceiling price subject to downward negotiation after the option is exercised and care is taken to insure that the NTE price is sufficient to cover inflation applicable to the option. The impact of inflation is measured by the use of a Cost Index Method EPA provision subject to the NTE ceiling price.

CHAPTER III

ANALYSIS OF DATA

A. HISTORICAL DATA ON DARCOM'S IMPLEMENTATION OF EPA. As was stated in Chapter I, one of the study approaches was to obtain and analyze DD Form 350 data to determine the current status and trend in the use of EPA provisions within DARCOM and its Major Subordinate Commands (MSC's). Table 3 shows the usage of EPA contracts awarded by MSC and DARCOM from Fiscal Year 1970 (FY 70) through Fiscal Year 1976 (FY 76). The number of EPA contracts awarded per year prior to FY 73 in DARCOM remained fairly constant. In FY 74 and 75 the number of EPA contracts awarded increased drastically as a result of inflation. In FY 76 the trend appears to reverse as DARCOM emphasis on EPA decreased and inflation is as anticipated. It is noted that in recent fiscal years only three MSC's have awarded the predominant numbers of EPA contracts.

The basic trend in EPA contract awards over time as a relative percentage of EPA contracts compared to the total contract awards in DARCOM was a slight increase from FY 70 to FY 73 (Figure 1). The percentage more than doubled from FY 73 to FY 74 and again doubled from FY 74 to FY 75. The percentage dropped slightly from FY 75 to FY 76. But the number of EPA contract awards and their relative value over time is not completely meaningful by themselves. Although the relative number of EPA contracts awarded between FY 70 and FY 73 remained fairly stable, the dollar value of all EPA contract actions by DARCOM from FY 70 to FY 73 was significantly reduced (Table 4). The reason was that there were few EPA contracts covering very few dollars. Thus by knowing these facts, one can see in the fall of 1973 as a result of the Arab oil embargo that many contractors were requesting relief due to inflation

and material shortages. After FY 73, in FY's 74 and 75, the trend in total contracts dollars covered by EPA increased proportionately to the increased number of EPA awards. However, in FY 76 (incl 7T) the dollar value of EPA contract actions increased although the number of EPA contracts decreased. Although ARMCOM, TROSCOM, and TACOM have been the biggest users of EPA in absolute numbers, TACOM, ARMCOM, MICOM and ECOM have covered the largest number of dollars awarded with EPA provisions. The dollar value of all EPA contract actions in DARCOM is still increasing since its low point in FY 73 (Figure 2).

The data shows that the percentage of FP with EPA compared to all FP type contract awards have increased in recent years as shown in Table 5 and illustrated in Figure 3. The percent of DARCOM dollars spent on FFP contracts with EPA clauses by FY compared with dollars on all contract types has increased in recent years as shown in Table 6 and illustrated in Figure 4. One can conclude that the current trend in dollars covered by EPA clauses is up although the number of awards in FY 76 was down. This only means that the dollar value of the contracts with EPA were larger.

B. A SAMPLE OF EPA CONTRACTS AT SELECTED DARCOM MAJOR SUBORDINATE COMMANDS (MSC's). A sample of 50 fixed-price contract files from three MSC's awarded from FY 70 through FY 7T were reviewed and extracted data analyzed. The data analyzed are discussed below in three parts. The first part of the discussion is directed at the type of clause used; the second addresses the characteristics of the contracts; and the last part concerns the portion of the contract unit price covered by the clause and adjustments under the clause.

1. Selected Major Subordinate Commands Use of Clauses. The EPA contracts sampled by the research team utilized only three of five types of EPA

TABLES AND FIGURES

TABLE 3. NUMBER OF EPA CONTRACTS AWARDED BY MSC & DARCOM BY FISCAL YEAR

MSC'S	FISCAL YEAR						
	Price Escalation					EPA	
	70	71	72	73	74	75	76[a]
ARMCOM[b]	32	19	27	20	62	121	98
AVSCOM	0	0	0	0	1	4	4
ECOM	2	1	0	3	1	5	3
MICOM	0	0	2	2	4	9	10
TACOM	6	6	4	6	8	28	27
TECOM	0	1	2	4	7	4	12
TROSCOM[c]	5	2	1	1	4	19	35
OTHER	0	4	0	8	8	15	5
DARCOM	45	33	36	44	95	205	195

a] FY 76 and FY 7T are combined.

b] Formed in FY 74 as consolidation of WECOM/MUCOM.

c] Prior to FY 74 TROSCOM was known as MECOM

*NOTE: In March 1974 the term "Economic Price Adjustment" was substituted for the term "Price Escalation."

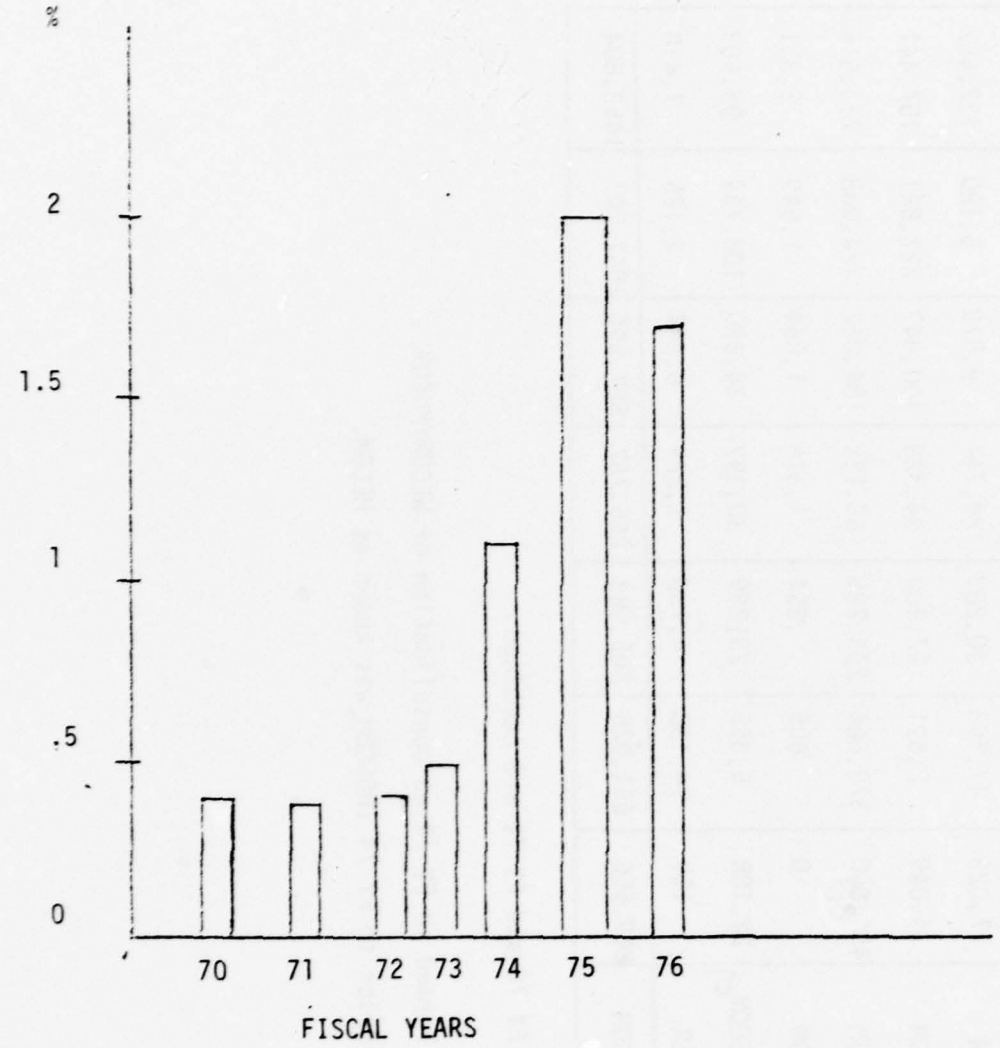

FIGURE 1. PERCENTAGE OF DARCOM CONTRACTS WITH FIXED-PRICE EPA PROVISIONS

TABLE 4. DOLLAR VALUE OF ALL EPA CONTRACT ACTIONS BY MSC & DARCOM BY FY

(DOLLARS IN THOUSANDS)

MSC'S	FISCAL YEAR						
	Price Escalation					EPA	
	70	71	72	73	74	75	76[a]
ARMCOM[b]	242,064	165,362	185,866	118,866	316,061	367,422	401,502
AVSCOM	40,193	39,960	28,954	762	2,019	29,488	48,776
ECOM	17,023	47,108	30,283	20,747	9,579	6,180	132,452
MICOM	34,049	2,521	27,180	34,329	100,947	227,821	157,441
TACOM	454,060	379,685	205,289	58,122	84,062	324,088	713,516
TECOM	0	805	,854	1,315	1,864	1,649	5,351
TROSCOM[c]	22,108	5,355	23,239	30,397	34,620	108,734	95,603
OTHER	159	14,130	4,130	1,229	8,544	2,125	7,518
DARCOM	809,656	654,926	505,583	265,767	557,696	1067,507	1453,804

a] FY 76 and FY TQ are combined.

b] Formed in FY 74 as consolidation of WECOM/MUCOM.

c] Prior to FY 74 TROSCOM was known as MECOM.

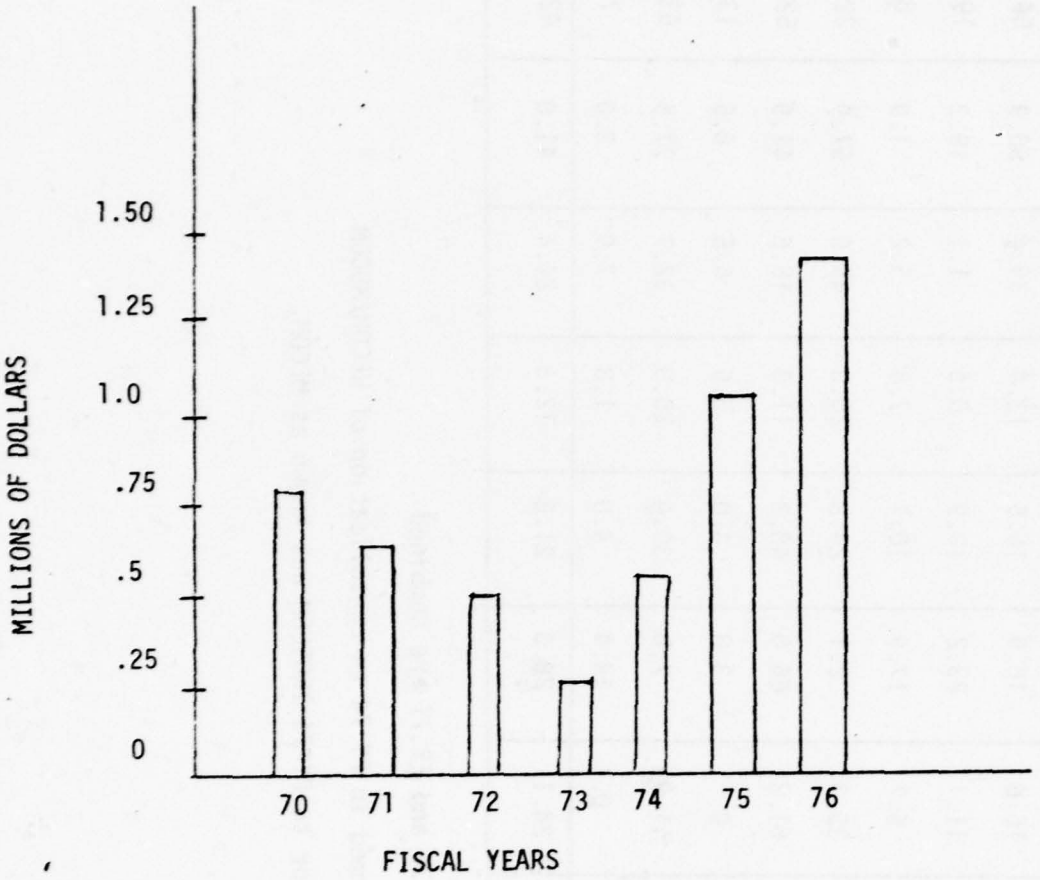

FIGURE 2. DOLLAR VALUE OF ALL EPA CONTRACT ACTIONS IN DARCOM

TABLE 5. DOLLAR VALUE OF ALL EPA CONTRACT ACTIONS AS A PERCENT OF ALL FP TYPE CONTRACT ACTIONS BY MSC & FY.

MSC'S	FISCAL YEAR						
	Price Escalation					EPA	
	70	71	72	73	74	75	76 a]
ARMCOM b]	16.6	16.9	16.5	13.4	39.4	50.9	54.6
AVSCOM	11.1	23.2	18.9	0.6	1.1	19.3	19.0
ECOM	5.7	17.9	10.1	7.8	3.2	1.9	8.0
MICOM	35.3	2.1	24.8	25.0	45.0	57.9	32.5
TACOM	61.3	66.0	48.3	11.3	15.6	41.9	52.7
TECOM	0	3.0	4.0	5.6	6.5	6.5	13.2
TROSCOM c]	11.9	7.0	30.0	25.9	32.7	77.5	63.0
OTHER	0.1	14.4	4.0	1.8	7.9	3.0	7.8
DARCOM	24.1	28.3	21.8	12.3	24.4	41.0	42.5

a] FY 76 and FY 7T are combined .

b] Formed in FY 74 as consolidation of WECOM/MUCOM.

c] Prior to FY 74 TROSCOM was known as MECOM.

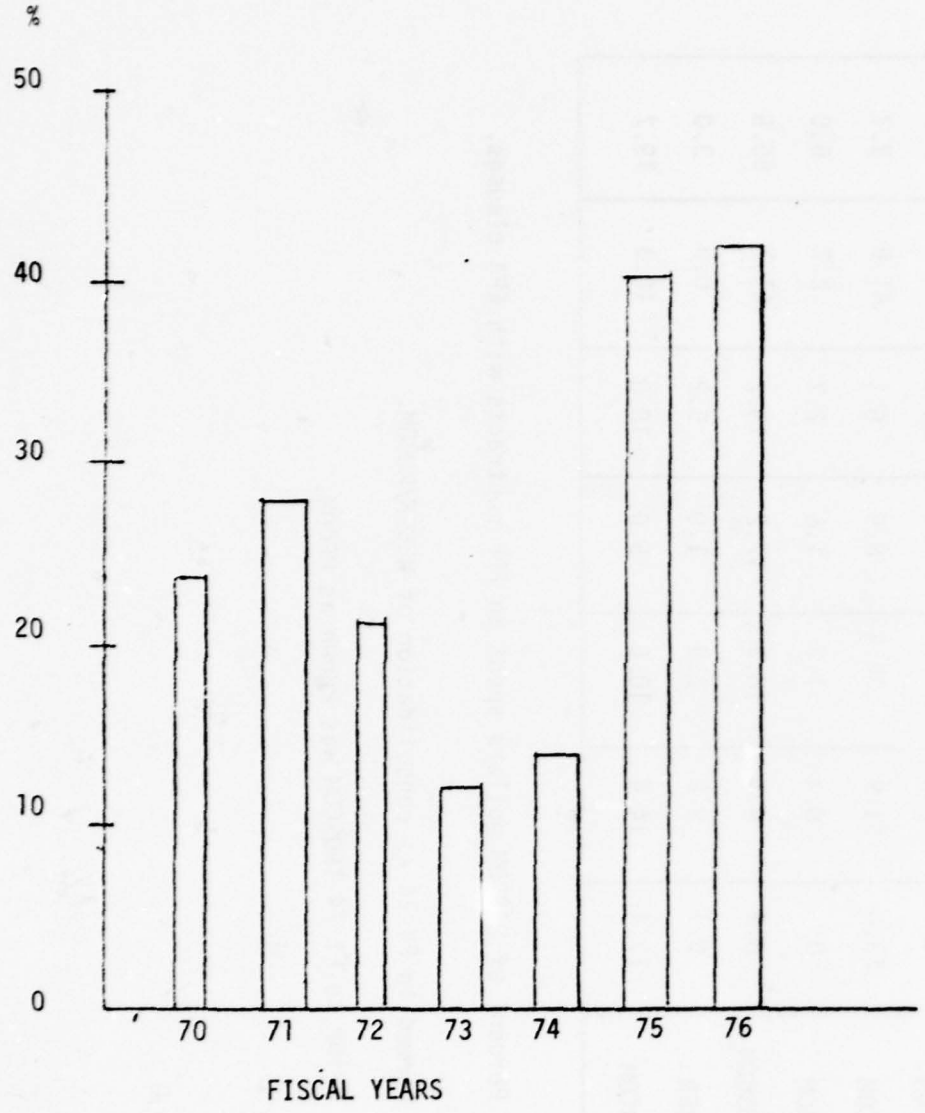

FIGURE 3. PERCENTAGE OF DARCOM DOLLARS SPENT ON FFP CONTRACTS COMPARED WITH DOLLARS OF ALL FP TYPE CONTRACT ACTIONS BY FY.

TABLE 6. DOLLAR VALUE OF ALL EPA CONTRACT ACTIONS AS A PERCENT OF ALL CONTRACTS ACTIONS BY MSC AND FY

MSC'S	FISCAL YEAR						
	Price Escalation					EPA	
	70	71	72	73	74	75	76[a]
ARMCOM [b]	8.8	8.9	8.9	6.7	21.2	22.8	23.5
AVSCOM	5.0	8.0	5.5	0.1	0.3	4.0	5.6
ECOM	2.6	8.3	5.2	3.6	1.5	0.8	3.2
MICOM	6.1	0.4	4.1	3.6	10.7	18.9	9.9
TACOM	53.8	51.9	36.4	8.9	6.1	41.9	3.7
TECOM	0	8.3	1.2	1.8	2.7	2.7	6.0
TROSCOM [c]	8.9	4.5	18.3	17.2	19.2	61.7	55.5
OTHER	0.1	9.2	2.9	1.0	5.2	0.9	3.0
DARCOM	13.4	14.4	10.6	5.0	10.0	18.0	19.7

a] Percent of DARCOM dollars spent on FFP contracts with EPA clauses.

b] Formed in FY 74 as consolidation of WECOM/MUCOM.

c] Prior to FY 74 TROSCOM was known as MECOM.

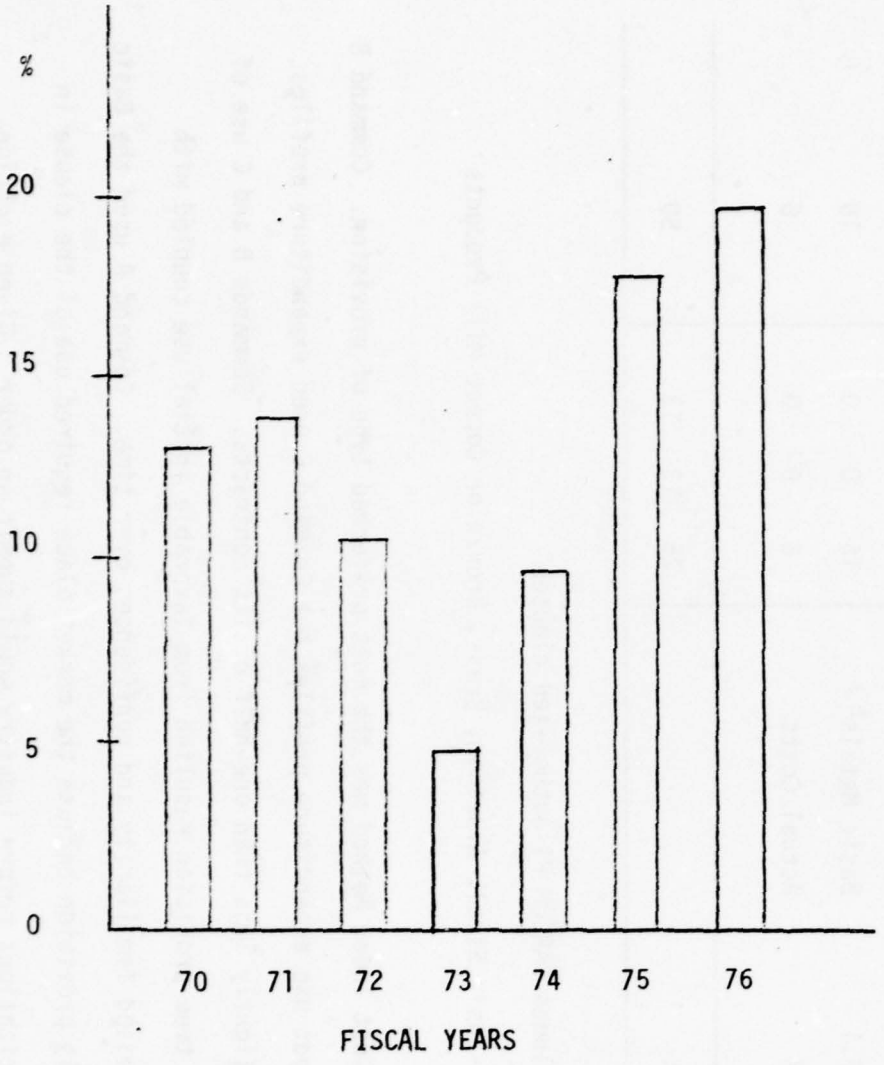

FIGURE 4. PERCENTAGE OF TOTAL DARCOM DOLLARS SPENT ON FFP CONTRACT WITH EPA CLAUSES BY FISCAL YEAR

provisions authorized by the ASPR as shown in the following table.

TABLE 7. USE OF AUTHORIZED CLAUSES

ASPR CITE		FREQUENCY A	B	C	TOTAL
3-404.3(c)(3)	Cost Index[a]	3	12	13	28
7-106.1	Basic Metals[b]	16	0	0	16
7-107	Actual Costs	6	0	0	6
TOTAL		25	12	13	50

a) Includes DARCOM PI authorized clauses

b) EPA-Basic Steel, Aluminum, Brass, Bronze or Copper Mill Products

The Cost Index Method was the most preferred type of provision. Command B did not use expenditure profiles but Command C used expenditure profiles in slightly less than one-half of its contracts. Commands B and C use of this type provision resulted from favorable initial use coupled with increased familiarity and confidences over time. Command A used the Basic Metals provision because the market place required use of the clause in solicitations before industry would submit an order. Given a choice, operational personnel at Command A preferred the Actual Costs provision because the contractor would only receive an adjustment based on costs verified by the Defense Contract Audit Agency.

It should be noted that not one of the contracts sampled contained the EPA clauses for nonstandard steel items, standard supplies, or semi-standard supplies. The use of the Cost Index Method clauses may in large part be due to a DA letter[10] that states the use of multi-year contracts, options, or indefinite delivery type contracts is inappropriate unless an effective EPA provision is to be included in the contract.

2. Characteristics of Contracts Containing EPA Provisions. This portion of the discussion addresses Cost Index, Basic Metals, and Actual Costs provisions.

a. Time and Contract Value. The Basic Metals clause was utilized in contracts with an initial period of performance ranging from 30 to 210 days. The dollar value of the initial contracts varied from $10,509 to $39,205. The data reflects the instability and uncertainty experienced by the basic metals industries and proper utilization of the Basic Metals clause.

The Cost Index clauses (ASPR and DARCOM PI) were placed in contracts with initial periods of performance ranging from 163 to 1827 days and dollar values of $12,321 to $24,897,735. The contracts with the lower periods of performance had high initial award values and the contracts with low initial dollar values had long periods of performance. Generally, the data shows proper utilization of the Cost Index clause. The Actual Cost clause (ASPR 7-107) was utilized in contracts with an initial period of performance ranging from 211 to 522 days. The dollar value of initial contracts varied

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[10] Letter, SAAS-IL-MP, ASA(I&L), 20 Jun 74, subject: Impact of Energy and Inflation on Procurement.

from $359,956 to $90,043,863. The data indicates proper application of the Actual Cost clause.

b. Multi-year, Options, and First Article. One MSC's use of EPA clauses was restricted to contracts that contained multi-year or option requirements. There was one observation of the use of an EPA clause because of a first article requirement. The greater majority of the other contracts reviewed did not contain multi-year, option, or first article requirements.

c. Ceilings. One command had a ceiling on all EPA adjustments. The ceiling was 50 percent in two cases, 25 percent in seven contracts, and 10 percent in the 18 remaining contracts. A second command had no ceiling in five contracts, and no ceiling higher than 30 percent in the other eight contracts. The last command had no ceilings on EPA adjustments if applying to other than the program years of a multi-year contract. In other words, options had no ceiling, whereas, the corresponding program year had ceilings.

3. Extent of Unit Price Coverage and Frequency of Adjustment. The contracts containing the Basic Metals Clause (ASPR 7-106.1) had EPA coverage for 100% of item unit price. The Actual Cost clause (ASPR 7-107) contract data allowed determination of the extent of unit price coverage on only two of six observations. The percentages were 52 and 76. Contracts containing the Cost Index Method had unit price coverage ranging from 80 to 100 percent. The latest contract with 100% coverage of unit price for EPA purposes was awarded 4 April 1975. Contracts awarded since that date have had unit price EPA coverage in excess of 85% on only two occasions (86.2 and 88%). All the other post-April 1975 contracts had ceilings

between 80 and 85%.

The frequency of contractual adjustment pursuant to the EPA clauses varied by the type of clause utilized. Only one adjustment was observed on a Basic Metals EPA contract in the amount of $489. There were a large number of the Actual Cost and Cost Index EPA contracts that had adjustments. The major reason was the large dollar values involved. The largest number of adjustments and largest total EPA (Cost Index) adjustments for an individual contract value were five and $4,369,060 respectively which represents a 21% upward adjustment of the base prices of the contract. The highest percentage increase observed was 59.13% of the base unit price. This occurred for the option quantity of the fifth year of a multi-year contract. The fifth program year quantity has an EPA ceiling of 10% whereas the fifth program year option quantity had no ceiling on the EPA. There were no observed downward adjustments under EPA provisions, although certain commodities have experienced declines (e.g. copper).

4. Miscellaneous Data Analysis. Data was gathered on EPA contract characteristics such as: large or small business, competitive or sole source and certified cost or pricing data or lack thereof. The only discernible observation was that 90% of the 50 EPA contracts were price competition and thus did not involve certified cost or pricing data.

C. PROBLEMS AND PITFALLS IN THE APPLICATION OF EPA PROVISIONS. The following discussion is based on interviews of personnel in policy, legal, pricing, audit and procurement operations and review of contract files and MSC's policy.

1. Current Policy and Use Compared. The current use of EPA provisions suggests a relatively high degree of confidence in the leveling of

inflationary pressure to a range in which contingency pricing is preferred to EPA provisions. There are exceptions such as multi-year procurements, lead, lumber and other selected commodities. One of the questions in most people's minds is, what is "...significant economic fluctuations in labor or material costs..." as used in ASPR 3-404.3(a). In essence the answer is whatever a particular buying office or personnel thereof considers it to be. No guidance has been promulgated by higher echelons of procurement except in a case of the after-the-fact acknowledgement of severe economic conditions as experienced in the early 1970's. The field operations personnel were unanimous in voicing support for continued availability of EPA clauses for DOD contracts.

Although the number of contracts with EPA provisions is decreasing, many people in Government and business foresee a need and increased usage of EPA provisions in the future. The timing of the need and an increased use of EPA is the subject of much discussion. It appears history may repeat itself in a fashion similar to the early 1970's.

2. Ceilings. Ceilings on maximum price adjustment under EPA provisions or lack thereof is a subject of much debate in the procurement field. As noted earlier in this chapter, the extent to which ceilings are or are not applied to EPA adjustments varies widely in the field.

Proponent of no ceilings on EPA adjustments contend unlimited upward adjustments are equitable since the Government has the right to unlimited downward adjustments. The absence of a ceiling is the only way to protect the contractors from unforeseeable significant economic fluctuations in labor and material.

Proponents of ceilings on EPA adjustments contend that it is the only method of placing a figure on the maximum liability to the Government. A ceiling also encourages efficiency on the part of the contractor whereas no ceiling can encourage inefficiency. The lack of a ceiling can cause a contractor to inefficiently purchase materials and place subcontracts. Additionally the contractor has no incentive to make the best use of the types of skills in his work force. All types of contracts should have a maximum Government liability feature. An EPA provision with a ceiling contains this essential feature of a Government contract.

3. Percentage of Base Unit Price Subject to EPA Adjustment. This aspect of EPA's is just as controversial as ceilings. People espousing 100% coverage maintain that it permits the contractor to stay in the same relative position, price-wise, as at the time of award. Profit is as necessary to a contractor as any cost element. This viewpoint is supported by the presence of the ASPR 7-106 clauses and the number of observations of the use of the Cost Index Method EPA provision with 100% coverage of the base unit price.

Proponents of all costs being subject to the EPA provision argue that indirect costs fluctuate in the same manner as direct costs. There is labor in both direct and indirect costs. For instance, if direct or union labor receive a pay raise, foremen and other supervisory personnel who are usually indirect charges, receive comparable wage increases. Items like Social Security increases also apply to all personnel of a contractor. Industrial oils and lubricants are also indirect costs subject to cost fluctuations. This position is evidenced by the recent DARCOM Cost Index Method EPA provisions containing 82 to 88% of the base unit price coverage.

The last school of thought is that the percentage of base unit price subject to EPA should be held to a minimum. The Actual Cost method of EPA essentially serves this purpose. The actual application of this method in the sample contracts was limited, or six of 50 observations. Advocates of this approach submit that if over 80% of the base unit price were subject to significant economic fluctuation the contractor would stop production, insist on time of delivery pricing, or accept only cost reimbursement type contracts.

4. Profit Considerations. Profit considerations do not apply in the case of price competition and subsequent lack of cost analysis. Although 90% of the sampled contracts were awarded based on price competition, the remaining 10% of the contracts had award values ranging from &740,000 to $90,000,000. The contract files did not contain any information as to the extent to which the EPA coverage influenced the weight assigned to contractors' assumption of contract cost risk under ASPR 3-808.6(b). In fact the table of contract types and percentage ranges under ASPR 3-808.6(b)(5) does not recognize EPA contracts. Since the EPA ceiling and the percentage of base unit price covered by the EPA provision are extremely important considerations in determining the contractor's assumption of cost risk, the observed lack of rationale for the assigned weight is a serious and grave omission.

5. EPA As An Evaluation Factor. Government procurement is concerned primarily with the reasonableness of the price which the Government ultimately pays [ASPR 3-806(b)]. This policy is treated inconsistently under formally advertised and negotiated procurements.

Where an Invitation for Bid (IFB) does not contain an EPA provision, ASPR 2-407.4(a) permits consideration of bids conditioned on the inclusion of an adjustment clause. If more than one bid is so conditioned, award could be made to a bidder whose basic contract price is not low, but when combined with the offered adjustment ceiling, provides the lowest maximum price. For example:

Bidder A Firm-Fixed Price Bid	=	$ 1,000,000
Bidder B Firm-Fixed Price Bid	=	$ 999,000
Bidder C $900,000 + 10% Ceiling	=	$ 990,000
Bidder D $950,000 + 5% Ceiling	=	$ 997,500

In the above example, award would be made to bidder C. If bidder C or D had not submitted a bid, award would be made to bidder B. If bidder B had a $990,000 offer and all other factors were equal, the competition between B and C for award would be based on the flip of a coin. This does not consider that the actual Government liability to bidder C may be less than $990,000. This encourages bidders to bid firm fixed prices with contingency pricing included since their competitive posture is not improved by including an EPA provision eliminating this cost contingency in their bid price. Where an IFB contains an Economic Price Adjustment Provision, ASPR 2-407.4(b) does not permit reduced ceiling offers to be used in the evaluation. Moreover, bids deleting the adjustment provision must be rejected as nonresponsive. The required solicitation provision in ASPR 7-2003.23(a) includes these rules.

If the ASPR permitted the evaluation of EPA provisions, in the spirit of the principle of lowest overall cost to the Government two advantages would result. It would reduce the Government's contingent liabilities through evaluation of reduced ceilings and it would permit bidders to make a choice between Firm-Fixed Price or Fixed-Price with Economic Price Adjustment contract types.

The concern in eliminating the possible downward adjustment if bidders may elect to forego the adjustment provisions is understood. However, it is submitted that decisions to include adjustment provisions are driven by expectations of unpredictable increase in order to avoid firm pricing of inflation contingencies.[11]

ASPR 2-407.4(a) also provides that bids which contain EPA with no ceiling shall be rejected unless a clear basis for evaluation exists. This provision would tend to require, at least in spirit, a ceiling on adjustments in cases where an EPA clause is incorporated into an IFB. Formally advertised and negotiated procurements have been observed in which no ceiling was placed in the EPA clause and evaluation for award was based on quoted prices without allowances for escalation.

ASPR 3-501(b)(3), Part I, Section D (x), requires negotiated solicitations to include under evaluation factors for award identification of special factors, such as Government cost or other expenditures. The review of the sample contracts failed to find any instance of the EPA provisions or ceilings being an evaluation factor. In fact, if EPA was mentioned under evaluation factors, it was to say that evaluation will be based on quoted prices without the allowable escalation being added.

Procurements that required certified cost or pricing data on EPA did not require the offeror to provide any cost or pricing data on EPA adjustment ceilings if present or ultimate Government liability under EPA if upward adjustments were unlimited.

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[11] Fred Lippert, Economic Price Adjustment, Unpublished Paper, U. S. Army Troop Support Command, St. Louis, MO, March 1977.

The problem discussed earlier on EPA formally advertised procurements is compounded in negotiated procurements because of requirements of Public Law 87-653, "Truth in Negotiations." Since the DD Form 633 series only requires the offeror to submit cost or pricing data in accordance with instructions to offeror and the footnotes on the form, the offeror is under no obligations to submit cost or pricing data on EPA adjustments because neither the footnotes to the DD Form 633 nor the sampled contracts instructions to offerors required the data. This is contrary to the spirit of the Public Law in situations described above. Of course, the precedent has been set by the clause cited in ASPR 7-2003.23(a).

6. Small Business Considerations. Many facets of Government procurement recognize the circumstances of a small business competing in the Government marketplace. The ASPR contains policy and procedures which make special provisions for small businesses. These provisions include contract financing, subcontracting programs, and set-asides. This type of consideration is not extended to the area of EPA.

The EPA clauses with adjustment based on established price do not create a problem in this regard because the clauses are authorized, as a minimum, in contracts over $5000. The Actual Cost Method EPA clause has a floor of $50,000 unless approved by the Chief of the Purchasing Office. The Cost Index Method essentially applies to contracts of substantial value with significant costs incurred beyond one year of contract performance. A $40,000 contract is insignificant to most large businesses, but to a small business it can be an extremely delicate financial undertaking.

7. Contingency Pricing and Contract Type. Formally advertised procurements and negotiated procurements with adequate price competition generally can be assumed to have contingency pricing minimized or eliminated by the presence of competition. In periods of rampant inflation, this generality may not hold true. The early 1970's with prices quoted at the time of delivery severely strained the credibility of this generality. Contingency pricing could not be eliminated under such circumstances and it can be questioned as to what extent it was minimized. This is a dilemma under formally advertised procurements.

The situation changes under negotiated procurement. Cost or pricing data can be requested to assure the reasonableness of prices under negotiated procurements [ASPR 3-807.3(f) - higher approval and (g) - discretionary]. The sample of contracts reviewed did not show that cost or pricing data was requested under negotiated procurements to assure that contingency pricing was eliminated when price competition was obtained.

A high amount of contingency pricing could change the Government position on contract type. If EPA provisions will not reduce the maximum Government liability below 120% of initial price without contingencies, the Government may opt for a fixed-price incentive (FPI) contract. Since the study was limited to Fixed-Price contracts with EPA provisions, the study did not determine if FPI contracts were awarded because of unreasonable contingency pricing, high ceilings, or no ceilings on EPA adjustments.

The study did note EPA adjustments in excess of 20% of initial base unit prices, even assuming no contingency pricing.

8. Choice of EPA Clauses and Clause Construction. The choice of EPA clause for use in a particular procurement is theoretically left to the discretion of the Contracting Officer. Individual MSC's discourage the use of EPA provisions under certain circumstances and exhibit a preference for one or two clauses. This substantially results from past experience, familiarity, and degrees of confidence with the various EPA clauses.

Once a particular clause, especially in the case of the Actual Cost Method, is utilized by a MSC's with a reasonable degree of success, it is subject to little or no tailoring. Tailoring is usually limited to the Cost Index Method indices to be utilized and proportion of the unit price coverage allocated to labor or material.

The study noted that the areas of discretion and tailoring have been replaced by an attitude of conscious or unconscious habit. The requirement to design provisions to the needs of a particular procurement action is being ignored. Once an EPA clause is designed, it is normally used in every subsequent EPA contract regardless of the circumstances of the individual procurement.

9. Commitment, Expenditure and Delivery. There are indicators of concern on the part of field personnel on the timing of the EPA adjustment. The concerns were expressed in the areas of accelerated deliveries and a semantical problem with the language of ASPR.

The question of accelerated deliveries occurred in a contract that permitted the same. The contractor accelerated deliveries to a substantial degree over that called for by the contract delivery schedule. The EPA clause, tied to contract delivery schedule, allowed the contractor to obtain large EPA adjustments long after delivery of the pertinent contract line items. The MSC's solution was to provide for adjustment based on actual delivery dates if earlier than the contract schedule delivery dates. This reduced the Government's financial liability under the contract.

The semantics problem is created by the apparent conflict between the expression "...quantities scheduled under the contract for deliveries..." as essentially used in the standard ASPR clauses and the phrase "...probable expenditure or commitment basis (expenditure profile)," as used in ASPR 3-404.3(c)(3)c.11. In one sense, the traditional ASPR treatment of EPA adjustments refers to scheduled contract delivery. The Actual Cost Method of EPA allows use of most probable expenditure or commitment as the basis of allocating economic fluctuation protection to specific periods of time during contract performance.

Reviews of sample contract files and interviews of field personnel observed that expenditure profiles under the Actual Cost Method are based on the contract delivery schedule. This ignores the period of time in which the contractor incurs a firm obligation for the particular segment of costs subject to the EPA provisions of the contract. Confusion and misunderstanding is created because the EPA adjustment period can be influenced by the following considerations.

A contractor's method of inventory may be first-in-first-out (FIFO) or last-in-first-out (LIFO). Additionally, the contractor accounting system may call for a job order system of accumulating costs for individual contracts. In today's environment the FIFO inventory method can result in material charges to a contract lower than under the LIFO method. The job order accounting system should result in material charges closer to those experienced under the LIFO system.

The above variances in costs charged to a particular contract is compounded by the use of the term "...most probable expenditure or commitment basis (expenditure profile)." If suppliers are quoting prices at the time of delivery, expenditures would be a proper point to measure the contractor's liability for economic fluctuation. If the contractors can obtain firm quotes from suppliers, the period during which purchase orders are placed or commitment period is the best measure of the contractor's liability for economic fluctuation.

Use of the contract delivery schedule only measures the Government expenditure period and has no real relationship to the contractor's liability for economic fluctuation for material costs. This is not necessarily true for labor. The contractor's liability for labor is not incurred in the manner that material liabilities are incurred. Labor costs are incurred at varying rates throughout the period of contract performance and will vary by the type of item and production methods utilized.

Regardless of the foregoing, substantial labor costs are incurred prior to the period of contract scheduled delivery.

Many Cost Index Method EPA provisions observed by the study team did not have an expenditure profile. In lieu thereof the adjustment was based on the period the multi-year or option provisions were exercised or first article sample was approved, which is acceptable in periods of firm supplier quotes and firm labor contracts through the production period for which the adjustment is being made. It is obviously not appropriate for periods of rampant inflation.

10. Administrative Burden. During APRO's review of DARCOM's use of EPA on selected contracts, it was observed that administrative workload burdens on MSC personnel were created as a result of the use of EPA. Some were inevitable while others were unnecessary. Some of APRO's observations in this regard will be summarized below.

a. Reservation of Funds for EPA Adjustment. How should one reserve funds for potential use for the EPA contingency contained in the contract? How much should be set aside and how should the funds be monitored to preclude expiration? These are some of the questions that occurred during APRO's discussions with field personnel of their experiences with EPA.

The first major burden was to determine the amount of funds to set aside. Some MSC's set aside total funds up to the ceiling limit,

while other set aside funds based upon their past experience. A problem is created in monitoring the funds and deciding at what point in time to decommit so the funds can be used to purchase additional equipment before expiration. Another potential burden is determining how much to set aside if there is no EPA ceiling in the contract. The immediate problem is that if the EPA adjustments exceed the amount set aside, one risks being in violation of the Anti-Deficiencies Act (31 USC 665). It does not appear that one funding pool for EPA adjustments is practical, although DARCOM has given the MSC's that authority because normally funds cannot be co-mingled. Another burden is the indirect cost of setting aside funds which may never be needed on the EPA contract for which set aside.

b. Administrative Cost of Making EPA Adjustments Could Be More Than Actual EPA Adjustments. It must be noted that there is an in-house administrative burden and cost associated with having an EPA clause in a contract. The Government must realize that the ASPR criteria as to time and size of contract need to be followed so that the Government's actual administrative cost of making the EPA adjustments will not be more than the EPA adjustment dollars. In other words, on a small dollar contract of short duration use of FFP contract with contingency pricing rather than FP contract with EPA will be more cost effective.

(86.2 and 88%). All the other post-April 197[illegible] contracts had ceilings

c. Frequency of Adjustments. Although the predominant use of EPA within DARCOM was the Cost Index Method, the Actual Cost method was used and can also be an administrative burden. In the case of the Cost Index method, the complexity of the clause and whether or not an expenditure profile was used can compound the amount of computations necessary by the price analyst and comptroller personnel to effect the adjustment. This in turn can create a burden on contract administrative personnel in making modifications to update a large number of line items while complying with the DARCOM Commodity Command Standard System (CCSS). The key then is to consider the impact of the Cost Index clause used and whether it could be simplified by limiting the number of adjustments with or without an expenditure profile and accomplish the same purpose. It was observed that some Cost Index clauses were overly complex and could have been simplified and still have accomplished the same purpose.

In the case of the Actual Cost method additional administrative burden can be placed on MSC personnel. For example, the number of cost elements which must be adjusted and the need for an audit to actually verify the costs are not necessary under the Actual Costs method. It was observed that some DARCOM contracts which used the Actual Cost method had long lists of costs subject to EPA adjustment. An extreme example cited was a contract bill of materials. This is not what was intended by the ASPR Actual Cost Method Clause. It was only intended to cover a few significant cost items which made up a large percentage of contract price and could be expected to fluctuate significantly.

CHAPTER IV

FUTURE APPLICATIONS OF EPA

A. CURRENT ENVIRONMENT. The lessons learned in the past should be a guide for actions in the future. DARCOM had the wisdom and foresight to use the current period of relatively stable or predictable inflationary pressures to review EPA experiences to determine the need for revised criteria and techniques to be applied in future contracts. Recent publications have expressed concern for another period of high inflationary pressure. The prices of particular commodities and services are rising at a rate reminiscent of the earlier 1970's. Although there are divided opinions on future direction of the national and world economics, many national and international leaders and experts have voiced alarm over the specter of runaway or double digit inflation.

B. POTENTIAL PROBLEM. A comparison of the downward trend of EPA contracts within DARCOM with the projections of the economic picture in the future shows that DARCOM will be traveling a familiar road. The point is that once more inflationary conditions will be reacted to and not anticipated. It is imperative that procurement community provide for another potential round of inflation before the fact. The remainder of this chapter will discuss methods toward achieving just that objective.

C. THE SPECTRUM OF CONTRACT TYPES AND RISKS. The ASPR is clear in stating that the type of contract and pricing are interrelated and should be considered together in negotiations. The main reason is that the type of contract should reflect the degree of risk to both the contractor and the Government. It is noted that the ASPR provides that

the degree of risk to both parties be recognized by the type of contract. ASPR 3-404.3(a) points out that EPA provisions are necessary either to protect the contractor and the Government against significant economic fluctuations in labor or material costs or to provide for contract price adjustments in the event of changes in the contractor's established price.

One source that addressed risk and contract types provides the relationship between type of contract and the confidence limit of the cost estimate as shown in Table 8 below:

TABLE 8. CONTRACT TYPE COST ESTIMATE CONFIDENCE LIMITS

TYPE OF CONTRACT	CONFIDENCE LIMIT OF THE COST ESTIMATE
Firm-Fixed-Price	$\pm$ 5%
Fixed-Price-Incentive	$\pm$ 5% to 20%
Cost-Plus-Incentive-Fee	$\pm$ 20% or more
Cost-Plus-Fixed-Fee	None

SOURCE: Paul R. McDonald, "Government Prime Contracts and Subcontracts Service," Volume (Procurement Associates, Inc., Covina, CA, 1973), p. G-1-4.

The DOD and NASA Incentive Contract Guide provides the following characteristics being associated with contract types (Table 9).

TABLE 9. PROBABILITY OF VARIANCE FROM INITIAL ESTIMATE BY CONTRACT TYPE

TYPE OF CONTRACT*	*PROBABLE MAGNITUDE OF:	
	UNDERRUN	OVERRUN
Fixed-Price (FP)	Small	Small
Fixed-Price-Incentive (FPI)*	Medium	Medium
Cost-Plus-Incentive (CPIF)	Medium	Large

*Normally, for FPI contracts, we would expect confidence limits of -5 to -10%, +10 to + 20%.

SOURCE: Department of Defense, National Aeronautics and Space Administration, "Incentive Contract Guide."(U. S. Government Printing Office, Washington, D.C., October 1969), p. 86.

It is apparent from the foregoing discussion and the data presented in Chapter III that the policy on contract type and risk is not consistently applied in area of EPA contracts. It may be more correct to say that the policy is being ignored when it comes to EPA contracts. This can be attributed to several causes. One is that the policy on contract type, risk, and profit is silent on EPA contracts. Another cause is the lack of ceilings and projections of prices and indices to determine the cost risk of the parties to the contract. A third reason is inherent reluctance of the Government procurement community to move down the type of contract spectrum once the firm-fixed-price environment is achieved. Inspector General, Procurement Management Review, General Accounting Office, and Congressional sources inevitably criticize the lack of implementation on EPA contracts of the principle that each procurement action stands on its own and the policy on contract type and risk in the real world of procurement.

D. THE IMPACT OF EPA PROVISION NOT BEING USED IN A GOVERNMENT CONTRACT WHEN A LARGE AMOUNT OF INFLATION OR DEFLATION OCCURS.

1. Contractual Impact of EPA Coverage and Economic Conditions. The situation cited above can best be described by the use of a table. Table 10 summarizes the impact of inflation and deflation on Government FFP and FP with EPA contracts. One can readily see that there are six cases where there are no problems and two where there are problems for both the Government and the contractor.

TABLE 10. CONTRACTUAL IMPACT OF EPA COVERAGE AND ECONOMIC CONDITIONS

CONTRACT COVERAGE	ECONOMIC CONDITION	IMPACT ON GOVERNMENT	ECONOMIC CONDITION	IMPACT ON GOVERNMENT
FFP (No EPA)	Deflation	Problem-No price decrease-higher cost	Inflation	Major problem
FFP (No EPA)	No deflation	No problem	No Inflation	No problem
FP with EPA	Deflation	No problem price decreases	Inflation	No problem price increase
FP with EPA	No deflation	No problem	No Inflation	No problem

Now look at a form of contractual agreement similar to the trigger used to determine when retired civil servants get a cost-of-living adjustment. Utilize an EPA provision (assume cost index) and unless the index goes up or down an arbritrary 10% the EPA provision in the FFP contract is self-deleting. If the 10% figure is exceeded upward or downward, then the EPA provision clause in the contract would be triggered and be envoked per the conditions of the clause. Thus, the above table would then be changed to a state with all eight cases having no problems unless the terms of the triggered EPA provisions were exceeded.

2. Legal Problems. Generally in a FP contract there is no problem related to inflation unless it lacks an EPA provision. "The risk of sharply increased costs, unanticipated for in your contract price, is borne by you - not the Government and even though these increased costs reach the point of economic disaster, generally the law provides no relief."[12] The only potential route to receiving relief is through P.L. 85-804, but only if the firm and products are essential to the National Defense. But, "there is an even more serious problem with the P. L. 85-804 approach: It requires the contractor to throw himself upon the mercy of the Contracting Officer and the Government. The contractor has no right to this relief. Under the statute, the Government may, at its complete whim, decide not to provide the relief."[13]

3. Solution. The simplest solution is to use EPA when appropriate. However, one cannot always predict when runaway inflation will occur. This leads to EPA provisions not being used when it is appropriate.

When EPA is not used and there is still a high risk of inflation, one author suggests the following procurement techniques that a Contracting Officer can apply to reduce the potential risk to a contractor as follows:

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[12] Walter F. Pettit, "Material Shortages and Spiraling Costs: Impact on Government Contracts," Briefing Papers, The Government Contractor (August 1974, #744, Federal Publications, Incorporated), p. 2.

[13] "Statement of W. Stanfield Johnson, Reavis, Pogue, Neal, and Rose Before Subcommittee on Government Procurement Senate Small Business Committee," FCR, FCR#532, Bureau of National Affairs, Incorporated, Washington, D. C.: 5/27/74, pp. D-13.

1. Use an "or equal" provision for shortage materials.
2. Ask that materials that are hard to get or in short supply be furnished as GFP (Government Furnished Property).
3. Allow the contractor to purchase materials at the time of contract award when a First Article is required.
4. Avoid fixed price option provisions and long-term contracts of large dollar value.[14]

As was mentioned earlier, a trigger mechanism appears to be the best solution to solving this EPA problem.

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[14] Walter F. Pettit, "Material Shortages and Spiraling Costs: Impact on Government Contracts," Briefing Papers, The Government Contractor (August 1974, #74.4, Federal Publications, Incorporated), p.2.

E. THE EXTENT OF CONTRACT PRICE COVERED BY EPA CLAUSE. This is an area of conflicting policy and considerable debate within procurement circles. This subject was discussed briefly in Chapter III and will be elaborated on in the following paragraphs. It may assist the reader to first review the following table depicting the extent to which the ASPR allows the EPA provision to cover contract unit price.

TABLE 11. LIMITS ON UNIT PRICE COVERAGE AND CEILINGS BY EPA CLAUSE

CLAUSE ASPR CITE AND TITLE	PERCENTAGE OF UNIT PRICE COVERAGE	CEILING
7-106.1, EPA - Basic Steel, Aluminum, Brass, Bronze or Copper Mill Products (All Contracts)	100% a]	10% b]
7-106.2, EPA - Non-Standard Steel Items (All Contracts)	Amount of Unit Price Attributable to Costs of Labor and Steel	10% b]
7-106.3, EPA - Standard Supplies (Negotiated Contracts)	100% a]	10% b]
7-106.4, EPA Semi-Standard Supplies (Negotiated Contracts)	100% a]	10% b]
7-1-7, EPA - Labor and Material (Actual Costs Method) (Negotiated Contracts)	Labor (include fringe benefits or unit price for materials set forth in the schedule)	10% c]

TABLE 11 CONTINUED

CLAUSE ASPR CITE AND TITLE	PERCENTAGE OF UNIT PRICE COVERAGE	CEILING
3-404.3(c)(3) EPA - Labor or Material (Cost Index Method) (All Contracts)	Normally not to be applied to the profit of the contract	Normally no ceiling d]

a] Excludes preservation, packaging, and packing beyond standard commercial practice.

b] Can be exceeded if approved by the Chief of the Purchasing Office.

c] a above and ceiling is applied to individual labor rates and material prices.

d] Unless adjustments is based on indices below the four digit level.

The above table shows the wide range of options available to the Contracting Officer in selecting an EPA provision for a particular procurement.

1. Total Contract Price. The words "contract price" are used in the title of this portion of the report because one EPA provision (Cost Index Method) guidance refers specifically to contract price and all of the clauses can be applied to more than one contract line item. Additionally, many items such as data and certain spare parts and tools may be "not separately priced" in the contract schedule.

The percentage of contract price subject to EPA can have a considerable range. An Actual Cost Method EPA clause can theoretically be restricted to less than 5% of the contract price, based on only one labor rate or material price being cited in the schedule for a particular line item comprising a small portion of the total contract price. At the other extreme is the Cost Index Method which can theoretically cover 100% of contract price. The Actual Cost Method can be used only in negotiated contracts, whereas the Cost Index Method can be used in both formally advertised and negotiated procurements. In essence the ASPR permits the Contracting Officer to cover any percentage of contract price in the EPA provisions that he deems appropriate.

Care must be exercised to assure that only that portion of the contract price that is subject to significant economic fluctuations in labor or material costs or those items subject to changes in contractor's established prices for which the contractor and the Government are determined to need protection are covered by the EPA provision. Although the previous statement is very basic, the data analysis of the study team as set forth in Chapter III does not support its implementation.

2. Price of the Item. The EPA-Nonstandard Steel Items Clause gives bidders the prerogative of citing the percentage of the contract unit price attributable to the costs of labor and the cost of steel. In formally advertised procurement, with its lack of cost or pricing data and the DARCOM policy of essentially not evaluating EPA provisions for award purposes, the bidder is provided a very strong temptation to provide a greater degree of EPA protection for himself than a prudent man would deem necessary. This temptation is reinforced by a lack of definition of what constitutes labor and steel costs. The "Labor Index" for this clause is the base on the earnings of the contractor's employees in a particular shop to be designated by the contractor. It appears the clause is contrary to ASPR 3-404.3(a) which states in part, "Price adjustments based on established prices should normally be restricted to industry wide contingencies and price adjustments based on labor or material costs should be limited to contingencies beyond the control of the contractor."

It has been stated but not confirmed by sampled contracts, that contracts with the EPA Labor and Material (Actual Cost Method) clause have had the clause apply to the contract bill of materials and essentially all labor categories and associated fringe benefits. If true, it is questionable that all materials are subject to significant economic fluctuations. All labor may be so affected, but not necessarily all fringe benefits.

The DARCOM experiences with the EPA Labor or Material Costs (Cost Index Method) provisions provide a fertile area for discussion. The experiences are many but the most important cause of such experiences is the permissive guidance provided in ASPR 3-404.3(c)(3). The data on the sampled

contracts tends to show that the ASPR 3-404.3(c)(1) and (2) provisions are alternates to the Cost Index Method in lieu of reverse statement appearing in ASPR 3-404.3(c)(3)a.

The sample data also suggests that the use of this clause creates a contradiction. On the one hand, the clause is to be used when, ". . .the economic variables for labor and material are determined to be too unstable to reflect a reasonable division of risk between the parties absent economic price adjustment provisions." On the other hand, the clause with 80 to 100% of unit price of the applicable contract line item but without a ceiling on adjustments used in multi-year (up to five years observed) contracts with options does not provide for a reasonable division of risk between the parties.

There are fourteen factors that may be considered in preparing a Cost Index Method EPA provision. Thirteen of the factors are qualified by the word "should" which allows operations to ignore any or all of those thirteen factors regardless of the factors' pertinence to the individual procurement action. It is apparent why this EPA clause is the predominant one in use and most accepted. Such permissiveness must be eliminated by making consideration of all the factors mandatory.

F. EPA ADJUSTMENT BASES AND FREQUENCY PERIOD.

1. Adjustment Base. The base period is normally a three-month period consisting of the month prior to, of, and after award. Variations have been observed, but none of significance. One note of caution is to be specific as to the indices for those particular months or the indices published in those particular months. Consistency can be obtained by ASPR or departmental procedures defining the base period. Except for the Cost Index Method provisions,

the ASPR provides the "adjusted to" period. In the case of Cost Index Method provisions field personnel must assure that the "adjusted to" period reflects the most probable expenditure or commitment period for the costs subject to adjustment. The sample contract data shows this to be a weak area.

2. Frequency. Care must be taken in defining the frequency of adjustment under Cost Index Method provisions. Quarterly adjustments may be appropriate for small business whereas semi-annual adjustments may be adequate for large business. In any event the use of a trigger for adjustments prior to delivery of last unit called for by the contract is proper. This is cited in sub-paragraph (c)(v) of the Actual Cost Method clause. The trigger in this case is, ". . .a net change of at least three percent (3) of the then current total contract price."

G. VARIATIONS OF THE EPA PROVISIONS. There are several variations that can be introduced into the current DARCOM usage of EPA provisions. The first is utilizing in the Cost Index Method EPA clause a trigger provision as cited in ASPR 7-107 subparagraph (c). The net change in the then current total contract price must be at least three percent. This would eliminate the administrative cost of small dollar value EPA adjustments. The same provisions could be added to other EPA provisions cited in ASPR.

Another variation is to provide contingency pricing for normal or 4 to 6% inflation. The EPA provision would only be utilized for a percentage increase over and above the contingency pricing rate or abnormal inflation. The Air Force Systems Command utilizes this technique.

A third variation is contingency pricing of projected inflation.

The EPA provision would only cover inflation in excess of 10 or 15%. This is consistent with DOD policy of not guaranteeing a profit, sharing risk and will cover the administrative cost of the adjustment.

These are three alternatives that are suggested. There may be more, but the point to be made is that there still is room for innovation in developing EPA provisions.

H. ALTERNATIVES TO USE OF EPA PROVISIONS. There are several alternatives to the use of EPA provisions. Some are in disfavor but all are viable, acceptable, and in accordance with law and regulation.

1. Contingency Pricing. The current economic environment of relatively stable or predictable inflation lends itself to contingency pricing for short term contracts for some commodities. Short term would, for the purposes of this discussion, be defined as six months to a year. Currently unstable prices for such commodities as copper, lead, and lumber preclude the use of this alternative for a number of items. The current predictions of the economic climate in excess of one year would dictate a caution approach to contingency pricing for long term contracts.

2. Fixed-Price-Incentive (FPI) and Cost-Plus-Incentive-Fee (CPIF) Contracts. The basis for use of EPA is uncertainty. The ASPR Pricing Manual in discussing uncertainties states, ". . .they are closely related to the areas frequently suggested for consideration in selecting a pricing arrangement."[15]

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[15]Department of Defense, Armed Services Procurement Regulation Manual (ASPM#1) Contract Pricing, U.S. Government Printing Office, Washington, DC, 1975, p. 3B14.

Based on sample contract data analyses in an after-the-fact manner five-year multi-year contracts containing yearly range quantity options should have been other than fixed-price with EPA at least after the second year. If a five year contract was necessary, a more realistic approach would have been firm-fixed price in the first year, fixed-price with EPA in the second year, FPI in the third year, and CPIF in the fourth year. Another alternate is one or two-year contracts. These approaches would provide an equitable division of the risk between the parties to the contract. This approach was not observed, although in compliance with ASPR policy on risk, profit, and pricing arrangements.

3. Short Term Contracts. Another alternative is shorter periods of contract performance in times of high or unpredictable inflation or deflation. This approach is tied into the factor of equitable division of risk. Uncertainty in fact would dictate shorter contract periods to the prudent man unable to form a reasonable degree of confidence in cost estimates for periods in excess of one year.

4. Eliminate Multi-Year Contracts With Options. The discussion of the preceding alternatives leads one to conclude that multi-year contracts awarded during the earlier 1970's did not properly allocate risk to the parties to the contract. Additionally, many of the multi-year contracts had range quantity option prices, all subject to EPA provisions. In recent years multi-year contracts have contained or been replaced by "not-to-exceed" (NTE) option prices tied to an EPA provision.

The multi-year contract with range quantity option prices subject to EPA had only token unit price reductions for the option prices in all years. The option prices did not take the learning curve influence into consideration in any program year. A recommended discussion of this deficiency in multi-year contracts is a thesis by H. F. Candy.[16] The use of a NTE option tied to an EPA provision is also questioned. This type of option, like any option, is exercised in a sole source environment. The ASPR policy on cost or pricing data is circumvented by this type of contractual arrangement. It is in the best interests of the Government to prohibt this method of contract and substitute NTE options calling for cost or pricing data.

I. NEED FOR BETTER FORECASTING OF POTENTIAL INFLATION AND DEFLATION TO AID EPA DETERMINATIONS. There is distinct and pressing need to provide the Contracting officer accurate, complete and current data of labor and material indices trends sufficiently in the future (up to five years in multi-year procurements) to make a prudent decision on the EPA provisions among other pricing arrangements.

Data Resources, Inc. (DRI) provides escalation indices designed and forecasted for the investment appropriation categories and selected major weapons systems for the Comptroller of the Army. An example of a major weapons system index is that for the M60 tank. The index for the M60 tank:

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[16] Harold F. Candy, Masters' Thesis, Multi-year Procurement, Florida Institute of Technology, Melbourne, Florida, September 1974.

had Fiscal Year 1974 as the base year; was based on information available through March 1976; and projected the index through Fiscal Year 1983.[17] The Defense Contract Audit Agency uses this source of data in performing its mission. This capability could be expanded to provide appropriate economic trend data to the Contracting Officer in making a determination of contract type.

The participation of DARCOM in COPPER IMPACT[18] is a potential avenue to pursue in improving our economic forecasting. Though beyond the scope of this study, perhaps the DRI work can be tied into COPPER IMPACT. Selected headquarters or purchasing offices could be assigned to program and track appropriate indices. The results of such effort can be available through remote terminals under COPPER IMPACT or issued in DOD or departmental procurement circulars.

DOD or individual departments may want to monitor national, industrial, or individual indices and establish a trigger mechanism on their level. If the trend data for a particular index is abnormal all subordinate purchasing offices can be advised to be extremely prudent in selection of the contract pricing arrangement for appropriate procurements.

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[17] Data Resources, Inc., "Inflation Handbook," Washington, DC, August 1976, p.6.

[18] The purpose of COPPER IMPACT is to introduce computer technology to the contract pricing function as a medium for implementation of advanced analytical, information processing and management techniques such as: cost proposal simulation models; indirect cost simulation and tracking systems; centralized data banks of pricing information such as direct labor rates, overhead rates, price index levels, and so forth; analytical programs such as regression and plotting routines; and workload information and management and other "word processing" applications.

J. DOCUMENTATION. Documentation in the contract files reviewed ranged from inadequate to nonexistent in support of the following EPA decisions:

1. Use of an EPA provision in lieu of another pricing provision.

2. Use of a particular EPA provision over other preferred clauses.

3. Waiver of the 10% ceiling on adjustment by the Chief of Purchasing Office.

4. Rationale for no ceiling adjustment.

5. Rationale for percentage of contract or unit prices subject to EPA, and the percentage assigned to labor and materials under the Cost Index Method EPA provisions.

6. Profit considerations under EPA contracts.

7. Extent of consideration of the factors listed under ASPR 3-404.3 (c)(3)c for constructing a Cost Index Method EPA clause.

8. Basis for allocating labor and material for Cost Index Method EPA clauses expenditure profiles.

9. Method of funds reservation.

10. Who in the Government is responsible for assuring economic price adjustments have been made.

ASPR requires determinations in many of these cases. The problem is a specific requirement for substantive written documentation of the decision cited.

CHAPTER V

FINDINGS AND RECOMMENDATIONS

Economic Price Adjustment provisions are necessary contractual options available to the Contract Officer in the selection of contract type. The contract type should be a fair, reasonable, and equitable risk allocation between the contract parties. The following findings and recommendations will address the degree to which EPA policy dictates use of EPA provisions to allocate risk to the contract parties. For the reader's convenience in reviewing the rationale underlying the findings, page references are listed after each finding. Additionally, the findings and recommendations are separated into the categories of: policy, actual use; and risk, contract type, and cost analysis.

A. POLICY.

1. a. Finding. A serious deficiency in current EPA guidance is the absence of a definition of the term". . .significant economic fluctuations in labor or material costs. . ." as used in ASPR 3-404.3(a). (Page 32).

b. Recommendation. Consideration be given to providing a mechanism to alert the Contracting Officers when to obtain the data necessary to make a decision on the need for EPA provisions. The mechanism can monitor both general and specific indicies.

2. a. Finding. EPA policy essentially contains inadequate small business considerations (page 37).

b. Recommendations. Policy must contain small business considerations. EPA provisions must be considered for use in contracts with smaller dollar thresholds and shorter performance periods to aid small business firms.

3. a. Findings. The actual ceilings on EPA adjustments or absences of a ceiling were highly inconsistent between MSC's. (Page 30). A contract with an EPA provision without a ceiling does not contain a maximum liability to the Government, an essential feature of a Government contract. (Page 33).

b. Recommendation. All EPA provisions must contain a ceiling on adjustments thereunder.

4. a. Finding. Documentation to support EPA decisions is non-existent or woefully inadequate. (Page 62).

b. Recommendation. Policy must be promulgated to assure that written documentation to support EPA decisions is required and is specific as to the content.

5. a. Finding. MSC's of DARCOM are promulgating instructions on the use of EPA provisions contrary to ASPR 1-108(b). (Page 17).

b. Recommendation. MSC's must be monitored to eliminate the issuance of any instructions on the use of EPA provisions which do not comply with the ASPR policy.

6. a. Finding. The EPA-Nonstandard Steel Items Clause (ASPR 7-106.2) is in conflict with basic EPA policy. (Page 55).

b. Recommendation. The instructions and clause content must be amended to provide for the Government to fill in the percentage figures for the portion of the contract unit price attributable to the costs of labor

and cost of steel, and cite an industry wide labor index for the costs of labor subject to adjustment. DCAA can assist in determining the appropriate percentage figures.

7. a. Finding. ASPR 3-404.3(c)(3) is permissive in providing guidance for constructing a Cost Index Method EPA provision. (Page 55).

b. Recommendation. The word "may" should be replaced with the word "shall."

8. a. Findings. A trigger mechanism similar to that cited in ASPR 7-106.7(c)(v) for making EPA adjustments is not used in Cost Index Method EPA provisions. (Page 57). An EPA provision with a trigger mechanism, plus or minus X%, will protect both parties from significant economic fluctuations. (Pages 49 and 57).

b. Recommendation. Such a trigger mechanism must be considered to protect both parties from significant economic fluctuations.

9. a. Finding. There are attractive variations of EPA provisions that are seldom or never used, such as, a combination contingency pricing - EPA provision. (Page 57).

b. Recommendation. Consideration of EPA provisions must include variations such as contingency pricing for normal (i.e., 4 to 6%) inflation with EPA provisions applying only to an increase in excess of normal contingency pricing.

10. a. Finding. Fixed-priced options subject to EPA provisions in multi-year contracts do not consider learning curve effects and circumvent ASPR policy on cost or pricing data in a sole source environment. (Page 60).

b. Recommendation. Fixed-price options subject to EPA provisions up to a not-to-exceed price in multi-year contracts must be prohibited to preclude such circumvention and to permit analysis of learning curve effects on the option quantities.

11. a. Finding. EPA as an evaluation factor is inconsistently applied in formally advertised and negotiated procurements contrary to the principle of lowest overall cost to the Government, price and other factors considered. (Page 34).

b. Recommendation. EPA must be consistently applied as a required evaluation factor.

12. a. Finding. ASPR 3-808.6 does not recognize EPA contracts in assignment of profit or fee percentage for contract type and the contract files reviewed reflected this policy omission. (Page 34).

b. Recommendation. Consideration be given to assure that the risk associated with the various EPA provisions be reflected in profit objectives.

13. a. Finding. The MSC's methods of reserving and monitoring funds for EPA's do not reflect the particular circumstances of each EPA contract. (Page 42).

b. Recommendation. Methods of reserving and monitoring funds for EPA's must be developed and utilized by the MSC's that reflect the particular circumstances of projected adjustments that are less than the ceiling.

B. ACTUAL USE.

1. a. Findings. The dollar value of fixed-price contracts containing EPA provisions as a percentage of all contract types peaked in FY 71, reached a low in FY 73 and reached its highest levels since FY 70 in FY 75 and 76. (Page 18). The number of EPA contracts awarded is decreasing and the total dollar value awarded is increasing. (Page 19). The preceding two findings appear to be caused by an ASA(I&L) letter requiring EPA provisions in contracts containing multi-year, indefinite delivery and option requirements). (Page 29).

b. Recommendation. The DA policy letter, SAAS-IL-MP, dated 20 Jun 74, Subject: Impact of Energy and Inflation on Procurement, must be rescinded and the management of the MSC's directed to cease discouraging the use of EPA provisions in accordance with ASPR 1-108(a).

2. a. Finding. None of the sampled contracts (50) contained EPA clauses for non-standard steel items, standard supplies, or semi-standard supplies. (Page 29).

b. Recommendation. The continued need for these clauses must be analyzed.

3. a. Finding. Based on current usage, policy, and opinions EPA's are generally being placed in fewer contracts whereas economic projections would dictate the opposite trend. In other words, DARCOM will again react to inflation. (Pages 32 and 45).

b. Recommendation. Economic indicators in general and specific labor and material indicators should be monitored and PCO's be advised if the indicators show the need for EPA Provisions. The COPPER IMPACT-DRI interface proposed at end of Chapter IV is recommended for further study.

4. a. Finding. The contracts sample indicated the alternative cost index method EPA provisions are preferred over the primary EPA provisions cited in ASPR 7-106 and 7-107. (Page 28).

b. Recommendation. It must be emphasized that the clauses are only alternatives to primary EPA clauses and should be used accordingly.

5. a. Finding. The choice of EPA clauses and clause construction has evolved into a practice of habit, rather than tailoring to the particular procurement in question. (Page 39).

b. Recommendation. Emphasis must be placed on the need for tailoring clauses to the particular procurement situation.

6. a. Findings. EPA provisions are not being used when it is appropriate to protect the Government for materials or indices subject to deflation. (Pages 48 and 31). No downward EPA adjustments were observed. (Page 31).

b. Recommendation. Emphasis must be placed on the need for EPA provisions to protect the Government from deflation, especially in certain commodities that fluctuate widely in price.

7. a. Findings. Procuring Contracting Officers (PCO's) are not aware of the Government individual responsible for obtaining downward EPA's and assume that the contractor is responsible for obtaining upward EPA's. (Page 15). PCO's are not utilizing the services of the Defense Contract Audit

Agency (DCAA) to prepare presolicitation expenditure profiles for Cost Index Method EPA Clauses. (Page 16).

b. Recommendations. PCO's must be made aware of the Defense Contract Audit Agency (DCAA) resources available for both sole source and competitive procurements. PCO's must be notified that DCAS requires ACO's to assure that all contract price revisions have been made prior to the ACO's completion of the contract final payment notice. The notification must include a reminder that APP 1-402.50(v) places on the Contracting Officer the primary responsibility for the legal, technical, and administrative sufficiency of any contract which he executes.

C. RISK, CONTRACT TYPE, AND COST ANALYSIS.

1. a. Findings. The division of risk between the parties to a contract with EPA provisions varies greatly. (Page 56). In periods of significant economic fluctuations firm-fixed-incentive, cost-plus-incentive fee, cost-plus-fixed-fee contracts or combinations thereof appear more appropriate and consistent with policy on risk and contract type than any fixed-price with EPA contract. (Page 58). Contracts with EPA have a very narrow range of application within the spectrum of contract types contrary to experienced usage. (Page 37). The percentage of the base unit prices covered by an EPA provision and the ceiling on EPA's can theoretically vary from zero to 100% under existing policy. (Page 52). The percentage increase in the base unit price of some Cost Index Method EPA contracts casts doubt on the division of risk between the contracting parties. (Page 30). In the case of all Cost Index Method EPA provisions and allegedly some Actual Cost Method provisions the

percentage coverage of the base unit price is at a level far in excess of what would reasonably be considered that portion of the base unit price subject to ". . .significant economic fluctuations. . . ". (Pages 30 and 31). Past experience shows that EPA provisions in multi-year contracts during periods of significant economic fluctuations were improper. (Pages 32 and 58).

b. Recommendation. Consideration be given to assure that the division of risk between the parties to EPA contracts is fair and reasonable to both parties.

2. a. Findings. Expenditure profiles for Cost Index Method EPA provisions do not reflect allocation of economic fluctuation protection to the specified contract periods of time based on a most probable expenditure or commitment basis by the contractor. This is to the monetary detriment of the Government. (Page 39). When contracts allow accelerated deliveries the expenditure profiles for Cost Index Method EPA provisions tied to scheduled contract deliveries allow contractors to obtain windfall adjustments. (Page 41).

b. Recommendations. Expenditure profiles for Cost Index Method EPA provisions must be based on the contractor's most probable expenditure or commitment basis that is nearest to period of time that the contractor incurs a firm monetary obligation. Expenditure profiles tied to the delivery schedule should be rare or nonexistent.

3. a. Finding. Only 10% of the fifty EPA contracts required cost or pricing data because of the presence of competition. In times of significant economic fluctuation, the ability of competition to eliminate contingency pricing is questioned. (Pages 31 and 58). The contractor's warranty of no contingency pricing under the DARCOM PI Cost Index Method Clauses is meaningless, absent cost or pricing data and its attendant certification and contract clause (Pages 31 and 36).

b. Recommendation. The DARCOM PI Cost Index Method EPA clauses must be modified to delete paragraph (a) on contractor warranty that contract prices covered by the clause do not include contingencies to the extent that such increases are covered by the clause. If cost or pricing data is not required, proving the contractor violated the warranty is next to impossible. If cost or pricing data is required, the price reduction for defective cost or pricing data clauses can be invoked.

4. a. Finding. When cost or pricing data is required on a procurement containing an EPA provision, data is not requested or furnished on items such as maximum upward adjustments, percentage of base unit price coverage, percentage of labor and material coverage, expenditure profiles, and last but not least, downward adjustments. (Page 36).

b. Recommendation. This data must be required from an offeror on procurements subject to the requirements of ASPR 3-807.3 for cost or pricing data when an EPA provision is contemplated.

5. a. Finding. The Department of the Army is seriously deficient in the projection of economic conditions for consideration by the Contracting Officer in deciding on the use of an EPA or other type of contract. (Page 60).

b. Recommendation. Actions need to be taken to assure that Contracting Officers are furnished current and reasonably accurate projections of economic conditions to allow selection of a contract type that is in the best interests of the Government. (See Recommendation B3b).

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APPENDIX A

STUDY TEAM COMPOSITION

The study team consisted of the following individuals:

C. Eugene Beeckler, Project Officer and Procurement Analyst, US Army Procurement Research Office, ALMC, B.B.A., University of Wisconsin, 1961; M. S. in Procurement and Contract Management, Florida Institute of Technology, 1976. Mr. Beeckler has worked on APRO projects in the areas of warranties, change order administration, evaluation and negotiation of IR&D and B&P costs, DARCOM P&P reorganization and HPA criteria. Mr. Beeckler was a Contract Specialist with the AMC Chicago Procurement District, the NIKE-X Project Office and various Commands assigned the Ballistic Missile Defense Program. Mr. Beeckler was also a Supervisory Contract Specialist/Contracting Officer with the US Army Procurement Agency, Europe, Frankfurt/Main, FRG. After a short assignment as a Contract Negotiator with the Army Missile Command, Mr. Beeckler joined the APRO.

Kimrey D. Newlin, B. S. in Physics, Guilford College 1966; M. S. in Agricultural Economics, Clemson University 1969; M. E. in Industrial Engineering, Texas A&M University 1970; and Certified Professional Logistician. Operations Research Analyst, US Army Procurement Research Office, ALMC. Mr. Newlin has published numerous articles/reports on logistics and procurement, served as a featured speaker at numerous symposia in these areas and has received recognition for his research in these areas. Prior to joining the US Army Procurement Research Office, Mr. Newlin was a General Engineer (Instructor) specializing in RAM and ILS in the Integrated Logistics Support and Materiel Acquisition Course with the Army Logistics Management Center, Fort Lee, Virginia.

Shirley H. Carter, B. S., Virginia Polytechnic Institute and State University 1953, M. S., VPI & SU 1957. Computer Specialist, School of Management Science, US Army Logistics Management Center, Fort Lee, VA. Mr. Carter has co-authored several studies concerning various facets of government contracting including cost growth, incentive contracting and design to unit production cost. Mr. Carter is the author of studies involving the economic analysis of small purchases and automated bidders lists and the effectiveness of award fee contracts. Prior to joining the US Army Procurement Research Office, Mr. Carter was a member of the Computer Analysis Group of the 20th NORAD Region, US Air Force.

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13. ABSTRACT Project Background. One of the reasons for reviewing the US Army Materiel Development and Readiness Command's (DARCOM) Economic Price Adjustment (EPA) experience is that history often repeats itself. In the fall of 1973 few DARCOM contracts contained EPA provisions and the resulting inflation caused many DARCOM contractors to absorb large cost increases on their firm-fixed price contracts. Although many contractors requested relief as a result of inflation, there was no legal method to grant relief since they did not contain EPA provision. Since the current economic trend foresees continued inflation, there exists a need to study recent DARCOM EPA experience to preclude a repeat of the past. Objectives. The objectives of the study are to evaluate the effectiveness of the current policy, criteria, and usage of EPA provisions within DARCOM and to identify the need for revised criteria in determining the necessity for EPA in future contracts. Study Approach and Research Methods Employed. The study and research methods employed consisted of reviewing publications and on-going research in the area, evaluating current EPA policies, evaluating statistical data on EPA and interviewing personnel at HQ DARCOM and its major subordinate commands. Data was limited to contracts with EPA provisions awarded through 30 September 1976. The report does not reflect DARCOM experience since 30 September 1976 including recent policy statements on de-escalation. Findings and Recommendations. Economic Price Adjustment provisions are necessary contractual options available to the Contracting Officer in the selection of contract type. The contract type should be a fair, reasonable, and equitable risk allocation between the contract prices. The report summarizes that today's EPA policy promulgated since 1974 dictates current usage. The findings and their supporting narrative show that current usage fails to take into account DOD

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policy on risk, profit, contract type, and cost analysis. The recommendations include: revision to DOD policy on EPA, risk, profit, contract type, and cost analysis; areas of emphasis on the use of EPA; and potential areas for future studies.